one of said first and second surfaces, said loops having a height of from 3 to 9 mm.

5. (NEW) The dry mop fabric of claim 4 wherein said fiber comprises a filament.

6. (NEW) The dry mop fabric of claim 4 whrein said woven fabric comprises a knitted fabric.

7. (NEW) The dry mop fabric of claim 4 wherein said fabric is attached to a mop handle.

8. (NEW) The dry mop fabric of claim 4 wherein said loops comprise a fiber selected from the group consisting of polyamide, polyester, and mixtures thereof.

9. (NEW) The dry mop fabric of claim 8 wherein said fiber comprises a filament.

10. (NEW) The dry mop fabric of claim 4 wherein said fiber includes a cross-section which is not round.

11. (NEW) The dry mop fabric of claim 10 wherein said cross-section of said fiber is rectangular, and includes substantially flat sides.

12. (NEW) The dry mop fabric of claim 11 wherein said fiber comprises a filament.

REMARKS

The above-noted cancellation of claims 1-3, and addition of new claims 4-12, as well as the submission of a new Abstract and revisions to the Specification, are respectfully submitted prior to initiation of the prosecution of this application in the U.S. Patent and Trademark Office.

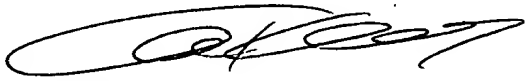
The above-noted new claims are respectfully submitted in order to more clearly and appropriately claim the subject matter which applicant considers to constitute his inventive contribution. No new matter is included in these amendments. In addition, the revisions to the Abstract and Specification are submitted in order to clarify and correct the Abstract and Specification and to conform them to all of the requirements of U.S. practice. No new matter is included in these amendments.

In view of the above, it is respectfully requested that these amendments now be entered, and that prosecution on the merits of this application now be initiated. If, however, for any reason the Examiner does not believe such action can be taken, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any objections which he may have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge applicant's Deposit Account No. 12-1095 therefor.

Respectfully submitted,

LERNER, DAVID, LITTENBERG,
KRUMHOLZ & MENTLIK, LLP



ARNOLD H. KRUMHOLZ
Reg. No. 25,428

600 South Avenue West
Westfield, NJ 07090-1497
Telephone: (908) 654-5000
Facsimile: (908) 654-7866
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CLOTH FOR A DRY MOP

~~TECHNICAL~~ FIELD~~:~~ OF THE INVENTION

[0001] The present invention ~~concerns~~ relates to a mop fabric ~~that is~~ designed for attachment to a mop handle and to be used to clean dry, soiled surfaces, in contrast to regular mop fabric, which is designed for immersion in a water-based washing medium and is used wet.

BACKGROUND~~:~~ OF THE INVENTION

[0002] Textiles have always been used for cleaning and removing dirt from soiled surfaces. These textiles have been available in various qualities, but mostly in the form of weaves. In recent times, they have consisted of ~~fibres~~ fibers of natural origin such as cotton, artificial ~~fibres~~ fibers such as polyamide and/or polyester, or most commonly blends of such ~~fibres~~ fibers. These textiles are most often woven or knitted. It is usual for cleaning fabrics to have different-sized loops, made from various materials, which protrude from the ground fabric. An example of the type of fabric that is designed to be attached to a mop handle and used wet is described in Swedish patent no. 94 03398-2.

~~THE TECHNICAL PROBLEM:~~

[0003] As a rule, satisfactory results are generally obtained with regard to the actual cleanliness of a floor when a wet mop is used to clean it. However, a film of moisture remains on the floor for some time and if anyone walks on the floor soon after it has been cleaned, it will quickly become soiled again. At the same time, the moisture adheres to the soles of the shoes and could soil other, clean surfaces if they are trodden on. In addition, there is always the inconvenience of having to use a bucket or similar container in which to carry the washing liquid when the wet-cleaning method is used. The washing liquid also consists of a mixture of water and chemical detergent, which ~~are~~ is costly and can

sometimes cause allergic reactions as well as an unpleasant ~~odour~~ odor. Water "wears out" the floor material, triggers emissions from the material, seeps into cracks and uneven surfaces and causes the growth of bacteria and mildew.

[0004] Dirt emulsifies in water that is used for cleaning. If any of this water is left on the floor, the dirt particles will remain behind once the water has evaporated. Quite simply, the floor will not be clean.

~~THE SOLUTION:~~

SUMMARY OF THE INVENTION

[0005] In accordance with the present invention, these difficulties in the prior art have been overcome by the invention of a dry mop fabric having a first surface and a second surface for cleaning soiled surfaces comprising a micro- or ultramicro-fiber having a count of from 0.60 to 0.25 DTEX per fiber, the fiber being woven so as to provide loops on at least one of the first and second surfaces, the loops having a height of from 3 to 9 mm. Preferably, the fiber comprises a filament. In a preferred embodiment, the woven fabric comprises a knitted fabric.

[0006] In accordance with one embodiment of the dry mop fabric of the present invention, the fabric is attached to a mop handle.

[0007] In accordance with another embodiment of the dry mop fabric of the present invention, the loops comprise a fiber such as polyamide, polyester, or mixtures thereof. Preferably, the fiber comprises a filament.

[0008] In accordance with another embodiment of the dry mop fabric of the present invention, the fiber includes a cross-section which is not round. Preferably, the cross-section of the fiber is rectangular, and includes substantially flat sides. Most preferably, the fiber again comprises a filament.

[0009] There has therefore always been a strong desire to be able to clean a floor or similar surface by using as dry a

cleaning method as possible. In accordance with the present ~~As per the~~ invention ~~being presented~~, a dry-mop fabric has now been produced for attachment to a mop handle and to be used to clean dry, soiled surfaces. This dry-mop fabric is distinguished by it consisting of micro- or ultramicro-~~fibre~~fiber or filament with a count of 0.60-0.25 DTEX per ~~fibre~~ fiber or filament and by it being woven or knitted with loops on one or both sides of the fabric, with a loop height of approximately 3-9 mm.

[0010] ~~As per the~~ According to the present invention, the loops are made of polyamide or polyester ~~fibre~~ fiber in various proportions, or a blend of these ~~fibres~~ fibers in one and the same loop.

[0011] ~~As per~~ According to the present invention, the cross-section of the filament should not be round, but preferably have as rectangular a shape as possible, with flat sides.

DETAILED DESCRIPTION ~~OF THE INVENTION:~~

[0012] The dry-mop fabric, ~~as per~~ according to the present invention ~~being presented~~, is designed for attachment to any mop handle and to be used to clean soiled surfaces. The mop handle is not included in the present invention; any mop handle can be used. It is of course also possible to use this dry-mop fabric without a handle by simply using the fabric on its own to clean dry, soiled surfaces by hand. If there is any water on the surface, it is naturally also possible to use the fabric, ~~as per~~ according to the present invention, to the same good effect - especially since the fabric is extremely absorbent.

[0013] The fabric consists of a ground fabric with protruding loops on one or both sides. The fabric can be woven or preferably knitted, so that the loops are firm and cannot be pulled out. The material comprising the loops should consist of micro- or ultramicro-~~fibre~~fiber or filament with a count of 0.60-0.25 DTEX per fibre or filament. ~~Dtex~~ DTEX is a

unit of measurement, where 1 DTEX represents one ~~fibre~~ fiber with a length of 1 000 metres and a weight of 1 gram.

[0014] ~~As per~~ According to the present invention, the material ~~in~~ of the ~~fibres~~ fibers is synthetic and the loops may consist of two different materials, i.e. a number of the ~~fibres~~ fibers could be polyamide, while the remainder could be polyester, for instance. As per the invention, it is also possible that the individual loops could consist of a blend of polyamide and polyester as well as contain natural ~~fibres~~ fibers.

[0015] ~~As per~~ According to the present invention, the cross-section of the filaments should not be round, but should have flat sides, preferably slanting and with as rectangular a shape as possible, whereby the ~~fibre~~ fiber surface will be as large as possible.

[0016] ~~As per~~ According to the present invention, the loops should be at least about 3 mm and no more than about 9 mm in height. The most advantageous measurement is in the region of from about 6~~-~~ to 8 mm. Each loop must consist of a large number of ~~fibres~~fibers. The closeness of the loops, i.e. the number of loops per unit of area, the yarn thickness and the loop height, must be proportioned so that when the fabric is pressed against ~~a~~ an underlying surface ~~underneath it~~ the loops remain upright or lie at an angle of no more than 45° to an imaginary vertical line. The force indicated in this instance is the normal weight of the mop handle plus some strength exerted by the operator, who holds the mop and moves it forwards. This maximum angle means that the part which is in contact with the underlying surface ~~underneath~~ largely consists of transverse ~~fibres~~ fibers. Because of the position, flatness and closeness of the ~~fibres~~ fibers across the entire surface of the mop, a propulsive effect on the dirt particles or other impurities arises. The particles are attracted to and accumulate on the ~~fibre~~ fiber surfaces, as well as between the

~~fibres~~ fibers and inside the loops. The relatively high loop height combined with the collectively large ~~fibre~~ fiber surface contributes to its ability to accumulate a large quantity of grime or dirt particles.

[0017] The cleaning action is highly effective because of the ~~microfibres'~~ microfibers' extreme softness, the length and closeness of the loops and the count and surface dimensions of the ~~fibres~~fibers . Even though the ~~fibres~~ fibers are soft and the loops are long, the loops will still not be flattened out because they support each other owing to their closeness. Since every surface is more or less uneven and the ~~fibres~~ fibers in the mop fabric adapt to the unevenness of the underlying surface ~~underneath~~ and force their way into even extremely small hollows, the fabric can also remove and accumulate the very small particles that are deposited in these uneven areas.

[0018] By combining the various parameters ~~as per the~~ according to the present invention ~~being presented~~, an extremely high-quality dry-mop fabric with extensive cleaning ability has been produced.

[0019] Because of its great ability to absorb liquids and particles it should, in principle, also be possible to use the mop for drying up liquid, with simultaneous absorption of both the water and any emulsified dirt contained in it.

[0020] ~~The invention is not limited to the design described, but can be varied in different ways within the scope of the patent claims.~~ Although the invention herein has been described with reference to particular embodiments, it is to be understood that these embodiments are merely illustrative of the principles and applications of the present invention. It is therefore to be understood that numerous modifications may be made to the illustrative embodiments and that other arrangements may be devised without departing from the spirit

and scope of the present invention as defined by the appended claims.